

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

| | | |
|--|--|---|
| Applicant's or agent's file reference P038260WO | FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, Item 5 below. | |
| International application No. PCT/GB2004/002981 | International filing date (day/month/year) 09/07/2004 | (Earliest) Priority Date (day/month/year) 09/07/2003 |
| Applicant RAY, Steven | | |

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 9 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☒ **Certain claims were found unsearchable** (See Box II).

3. ☒ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. _____

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☒ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB2004/002981

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N5/06 A61K48/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| X | NIU M. C. ET AL.: "Ribonucleic acid-induced changes in mammalian cells" PNAS, vol. 47, 1961, pages 1689-1700, XP002296833 the whole document | 1,3,4,12 |
| X | DECARVALHO S.: "Effect of RNA from normal human bone marrow on leukaemic marrow in vivo" NATURE, no. 4872, 16 March 1963 (1963-03-16), pages 1077-1079, XP009036534 the whole document | 1,3,4 |



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

G document member of the same patent family

Date of the actual completion of the international search

20 September 2004

Date of mailing of the international search report

06/10/2004

Name and mailing address of the ISA

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Authorized officer

Rutz, B

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| X | <p>DECARVALHO S: "In vitro angiogenic activity of RNA from leukemic lymphocytes." ANGIOLOGY. JUL 1978, vol. 29, no. 7, July 1978 (1978-07), pages 497-505, XP009036537 ISSN: 0003-3197 the whole document</p> | 1,3,4,12 |
| ✓ X | <p>DE LUCCA F L ET AL: "Effect of the calcium phosphate-mediated RNA uptake on the transfer of cellular immunity of a synthetic peptide of HIV-1 to human lymphocytes by exogenous RNA." MOLECULAR AND CELLULAR BIOCHEMISTRY. DEC 2001, vol. 228, no. 1-2, December 2001 (2001-12), pages 9-14, XP009036575 ISSN: 0300-8177 the whole document</p> | 1,3,4,9 |
| ✓ X | <p>RASCATI R J ET AL: "Characterization of Fv-1 gene-product-mediated resistance transfer." INTERVIROLOGY. 1981, vol. 15, no. 2, 1981, pages 87-96, XP009036576 ISSN: 0300-5526 the whole document</p> | 1,3,4,46 |
| ✓ X | <p>DECARVALHO S. AND RAND H. J.: "Comparative effects of liver and tumour ribonucleic acids on the normal liver and the Novikoff hepatoma cells of the rat" NATURE, no. 4767, 11 March 1961 (1961-03-11), pages 815-817, XP009036535 the whole document</p> | 1-4 |
| ✓ X | <p>YANG S F ET AL: "Albumin synthesis in mouse uterus in response to liver mRNA." PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA. MAY 1977, vol. 74, no. 5, May 1977 (1977-05), pages 1894-1898, XP002296835 ISSN: 0027-8424 the whole document</p> | 1,3,4,12 |
| | -/- | |

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| ✓ X | SANYAL S ET AL: "Effects of RNA on the developmental potentiality of the posterior primitive streak of the chick blastoderm." PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA. APR 1966, vol. 55, no. 4, April 1966 (1966-04), pages 743-750, XP002296834 ISSN: 0027-8424 the whole document | 1,3,4,6, 12 |
| Y | ----- WO 02/24873 A (FRANKS CHRISTOPHER RALPH ; DELLA BITTA RUGGERO (IT)) 28 March 2002 (2002-03-28) the whole document | 33 |
| ✓ Y | ----- RAFF MARTIN: "Adult stem cell plasticity: fact or artifact?" ANNUAL REVIEW OF CELL AND DEVELOPMENTAL BIOLOGY. 2003, vol. 19, 2003, pages 1-22, XP002297087 ISSN: 1081-0706 the whole document | 33 |
| ✓ A | ----- WO 01/00650 A (CHAPMAN KAREN B ; ADVANCED CELL TECHNOLOGY INC (US)) 4 January 2001 (2001-01-04) cited in the application the whole document | 1-46 |
| ✓ A | ----- US 2001/001066 A1 (CEZAYIRLI CEM ET AL) 10 May 2001 (2001-05-10) | 1-46 |
| ✓ A | ----- HAKELIEN ANNE-MARI ET AL: "Reprogramming fibroblasts to express T-cell functions using cell extracts" NATURE BIOTECHNOLOGY, vol. 20, no. 5, May 2002 (2002-05), pages 460-466, XP002296836 ISSN: 1087-0156 | |
| ✓ A | ----- HAKELIEN A M ET AL: "Novel approaches to transdifferentiation" CLONING AND STEM CELLS, MARY ANN LIEBERT, LARCHMONT, US, vol. 4, no. 4, 2002, pages 379-387, XP002965413 ISSN: 1536-2302 ----- -/-- | |

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB2004/002981

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| ✓ A | BABICH F. R. ET AL.: "Cross-species transfer of learning: effect of ribonucleic acid from hamsters on rat behavior" PNAS, vol. 54, 1965, pages 1299-1302, XP002296837 ----- | |
| ✓ A | FRANK B ET AL: "Interanimal "memory" transfer: results from brain and liver homogenates." SCIENCE. 24 JUL 1970, vol. 169, no. 943, 24 July 1970 (1970-07-24), pages 399-402, XP009036627 ISSN: 0036-8075 ----- | |
| ✓ A | DINGMAN W. AND SPORN M. B.: "Molecular theories of memory" SCIENCE, vol. 144, 3 April 1964 (1964-04-03), pages 26-29, XP009036619 ----- | |

FURTHER INFORMATION CONTINUED FROM PCT/SA/ 210

Continuation of Box II.1

Although claims 1-32 are (at least partially) directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2004/002981

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 1-32 are (at least partially) directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB2004/002981

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|----|---------------------|--|--|
| WO 0224873 | A | 28-03-2002 | AU 9007801 A WO 0224873 A1 | 02-04-2002 28-03-2002 |
| WO 0100650 | A | 04-01-2001 | AU 5902800 A BR 0012099 A CA 2377515 A1 CN 1362965 T EP 1196426 A1 JP 2003503071 T WO 0100650 A1 US 2002001842 A1 | 31-01-2001 29-07-2003 04-01-2001 07-08-2002 17-04-2002 28-01-2003 04-01-2001 03-01-2002 |
| US 2001001066 | A1 | 10-05-2001 | US 6251665 B1 US 2001005506 A1 US 6228640 B1 | 26-06-2001 28-06-2001 08-05-2001 |